I Claim:

1. A spindle assembly for a machine tool comprising;

a housing having at least one bearing seat;

a bearing having inner and outer races disposed in said bearing seat;

a sleeve disposed between a race of said bearing and said housing, bonded to said housing; and

a spindle mounted on said other race wherein said spindle is axially aligned relative to said bearing and said spindle and bearing are displaceable axially relative to said sleeve.

2. A spindle assembly according to Claim 1 wherein said sleeve is bonded to said housing with a metal -to-metal adhesive bonding material.

3. A spindle assembly according to Claim 2 wherein said material is an epoxy resin adhesive.

4. A spindle assembly according to Claim 1 wherein said spindle is provided with means for gripping a tool holder.

5. A spindle assembly according to Claim 1 wherein said housing includes a pair of spaced bearing seats in which there are disposed a pair of axially spaced bearings.

6. A spindle assembly according to Claim 1 when said housing is provided with an opening having an enlarged section defining said bearing seat, an outer race of said bearing is disposed in said bearing seat, said sleeve is disposed between said outer race of said bearing and said bearing seat and is bonded to said housing and said spindle is received within said opening and journaled in an inner race of said bearing.

7. A spindle assembly according to Claim 6 wherein said sleeve is bonded to said

housing with a metal-to-metal adhesive bonding material.

8. A spindle assembly according to Claim 6 wherein said enlarged section is provided with an annular wall, said sleeve is provided with an annular configuration, said outer bearing race is received within said annular sleeve and said annular sleeve is bonded to said annular wall of said enlarged section of said opening.

9. A spindle assembly according to Claim 6 wherein said spindle is provided with means for gripping a tool holder.

10. A spindle assembly according to Claim 6 wherein said opening in said housing includes a pair of spaced, enlarged sections defining bearing seats, and outer race of a bearing is disposed in each of said bearing seats and a sleeve is disposed between each outer race of a bearing and an adjacent annular wall of an enlarged section of said housing opening.

11. A method of fabricating a spindle assembly for a machine tool comprising;

forming at least one bearing seat in a housing;

mounting a spindle on a race of a bearing having inner and outer races;

mounting a sleeve on the other of said races of said bearing so that said bearing is displaceable axially relative to said sleeve;

applying an adhesive bonding material to at least one of a surface of said sleeve and a surface of said bearing seat;

mounting said spindle with said bearing and sleeve, on said housing so that said surface of said sleeve is disposed adjacent to said surface of said bearing seat with said adhesive bonding material adjoining said surfaces; and

allowing said bonding material to set to rigidly secure said sleeve to said housing, permitting said bearing to displace along an axial line of travel relative to said sleeve.

12. A method according to Claim 11 including forming said bearing seat slightly oversized relative to said sleeve.

13. A method according to Claim 12 wherein the amount of oversize is in the range of 0.010 to 0.015 inches.

14. A method according to Claim 11 including press fitting said race onto said spindle.

15. A method according to Claim 1 including;

forming first and second bearing seats in said housing;

mounting said spindle on a race of a first bearing having inner and outer races;

mounting a first sleeve on the other of said races of said first bearing so that said first bearing is axially displaceable relative to said sleeve;

applying an adhesive bonding material to at least one surface of said sleeve and a surface of said first bearing seat;

mounting said spindle with said first bearing and first sleeve, on said housing so that said first sleeve surface is disposed adjacent said first bearing seat surface with said adhesive bonding material adjoining said surfaces;

mounting a second sleeve on a race of said second bearing so that said second bearing is axially displaceable relative to said second sleeve;

applying an adhesive bonding material on at least one of a surface of said second sleeve and a surface of said second bearing seat;

mounting the other race of said second bearing on said house so that said second sleeve surface is disposed adjacent said second bearing seat surface with said adhesive bonding material adjoining said second sleeve surface and said second bearing seat surface; and

allowing said adhesive bonding materials to set to rigidly secure said sleeves to said housing, permitting said bearings to displace along an axial line of travel relative to said spindle, relative to said sleeve.

16. A method of fabricating a spindle assembly for a machine tool comprising;

providing a housing having an axial opening therethrough with spaced, first and second enlarged sections providing outwardly facing annular seating surfaces and annular side walls;

mounting a first annular sleeve on the outer race of a first bearing having inner and outer races so that said first bearing is axially displaceable relative to said first sleeve;

mounting said first bearing with said first sleeve disposed thereon onto a spindle having an annular seating surface so that said inner race of said first bearing seats on said annular seating surface of said spindle;

applying an adhesive bonding material to at least one of a surface of said first sleeve and the annular side wall of said first enlarged section of said housing opening;

inserting said spindle with said first bearing and first sleeve disposed thereon into said housing opening so that said first bearing is received in said first enlarged section, the outer race of said first bearing is seated on said annular surface of said first enlarged section and said annular sleeve is disposed adjacent the annular side wall of said first enlarged section with said adhesive bonding material disposed therebetween;

mounting a second annular sleeve on the outer race of said second bearing having inner and outer races so that said second bearing is axially displaceable relative to said second sleeve;

applying an adhesive bonding material to at least one of a surface of said second sleeve and the annular side wall of said second enlarged section of said housing opening;

mounting said second bearing with said second sleeve disposed thereon, on said spindle

disposed in said housing opening so that said second bearing is received in said second enlarged section, the outer race of said second bearing is seated on said annular surface of said second enlarged section and said second sleeve is disposed adjacent the annular side wall of said second enlarged section, with said adhesive bonding material disposed therebetween; and

allowing said adhesive bonding materials to set to rigidly secure said sleeves to said housing, permitting said spindle to displace along an axial line of travel relative to said housing.

17. A method according to Claim 16 wherein the inner races of said bearings are press fit onto said spindle.

18 A method according to Claim 16 wherein a spacer tube is provided on said spindle between the inner races of said bearings.

19. A method according to Claim 16 wherein a nut is threaded onto an end of said spindle for retaining said spindle and bearings within said housing opening.

20. A method according to Claim 16 wherein a cover plate is provided engaging the outer race of said first bearing.